In re Patent Application of
LETOR ET AL.
Serial No. **NOT YET ASSIGNED**
Filed: **HEREWITH**
_____/

Listing of the Claims:

This listing of claims replaces all prior versions and listing of claims in the application.

Claims 1-16 (canceled).

17. (new) A method for detecting variations of the torque of a DC motor, comprising:

generating a first signal representing the current flowing in the motor;

multiplying the first signal with a pre-established function to produce a product signal;

generating a comparison signal to correspond to a slope of the product signal; and

signaling a torque variation if the comparison signal surpasses a certain threshold.

18. (new) The method of claim 17, wherein the comparison signal is the difference between the product signal and a moving average thereof over a certain time interval.

19. (new) The method of claim 18, wherein a duration of the time interval is greater than a maximum time constant of torque to be ignored and smaller than a minimum time constant of torque to be detected.

20. (new) The method of claim 17, wherein the pre-established function is a saturated linear ramp function,

which is null when the motor is switched on and saturates when
a start-up phase of the motor ends.

21. (new) The method of claim 19, wherein the
duration ranges between 10-200 milliseconds.

22. (new) The method of claim 17, further comprising
filtering noise from the first signal before multiplying it
with the pre-established function.

23. (new) The method of claim 22, wherein filtering
comprises filtering the first signal with a low-pass filter
having a time constant in a range between 0.5-10 milliseconds.

24. (new) The method of claim 17, further comprising
accelerating the motor during a start-up phase by supplying it
with a linear saturating ramp voltage.

25. (new) A method for detecting a blocked condition
of a DC motor, comprising:
　　　detecting an increase of motor torque by
　　　　　generating a first signal representing the
　　　current flowing in the motor,
　　　　　multiplying the first signal with a pre-
　　　established function to produce a product signal,
　　　　　generating a comparison signal to correspond to
　　　a slope of the product signal, and
　　　　　signaling a torque variation if the comparison
　　　signal surpasses a certain threshold; and

signaling a blocked condition when an increase of
the motor torque is detected.

26. (new) The method of claim 25, wherein the
comparison signal is the difference between the product signal
and a moving average thereof over a certain time interval.

27. (new) The method of claim 26, wherein a duration
of the time interval is greater than a maximum time constant
of torque to be ignored and smaller than a minimum time
constant of torque to be detected.

28. (new) The method of claim 25, wherein the pre-
established function is a saturated linear ramp function,
which is null when the motor is switched on and saturates when
a start-up phase of the motor ends.

29. (new) The method of claim 27, wherein the
duration ranges between 10-200 milliseconds.

30. (new) The method of claim 25, further comprising
filtering noise from the first signal before multiplying it
with the pre-established function.

31. (new) The method of claim 30, wherein filtering
comprises filtering the first signal with a low-pass filter
having a time constant in a range between 0.5-10 milliseconds.

32. (new) The method of claim 25, further comprising accelerating the motor during a start-up phase by supplying it with a linear saturating ramp voltage.

33. (new) A control circuit for detecting a torque variation of an electric DC motor, comprising:

sensing means for sensing the current flowing in the motor and generating a first signal;

first circuit means for generating a product signal of the first signal and a pre-established function;

second circuit means for generating a comparison signal to correspond to a slope of the product signal; and

a comparator to compare the comparison signal with a threshold, and signal a torque variation when the comparison signal surpasses the threshold.

34. (new) The control circuit of claim 33, wherein said first circuit means comprises a low-pass filter that outputs a noise filtered replica of the first signal.

35. (new) The control circuit of claim 34, wherein the low-pass filter generates the noise filtered replica signal to correspond to a moving average of the first signal and has a time constant that ranges between 0.5-10 milliseconds.

36. (new) The control circuit of claim 33, wherein said second circuit means comprises a low-pass filter to filter the product signal, and an adder that generates the

comparison signal as the difference between the product signal and the filtered product signal.

37. (new) The control circuit of claim 36, wherein the low-pass filter generates the filtered product signal as a moving average thereof over a time interval having a duration greater than a maximum time constant of a torque to be ignored and smaller than a minimum time constant of a torque to be detected.

38. (new) The control circuit of claim 37, wherein the duration ranges between 10-200 milliseconds.

39. (new) The control circuit of claim 36, wherein the first circuit means comprises:

a waveform generator of a saturated linear ramp signal which is null when the motor is switched on and saturates when a start-up phase of the motor ends; and

a multiplier receiving the linear saturating ramp signal and the first signal, and generating the product signal.